

## ATTACHMENT A

### Plan Exhibits

Charleston Underpass at US 101 Alternatives (Location 1)

Alternative 1A: Undercrossing with Four Lane Alternative

Alternative 1B: Undercrossing with Two-Lane Alternative

Alternative 1C: Undercrossing with Four Lane Alternative (Direct Route)

Charleston Road at Stevens Creek Bridge (Location 2)

Alternative 2A: Separate Transit and Bike/Pedestrian Bridges

Alternative 2B: High-Level, Clear-Span Combined Bridge

Alternative 2C: Lower-Level Combined Bridge

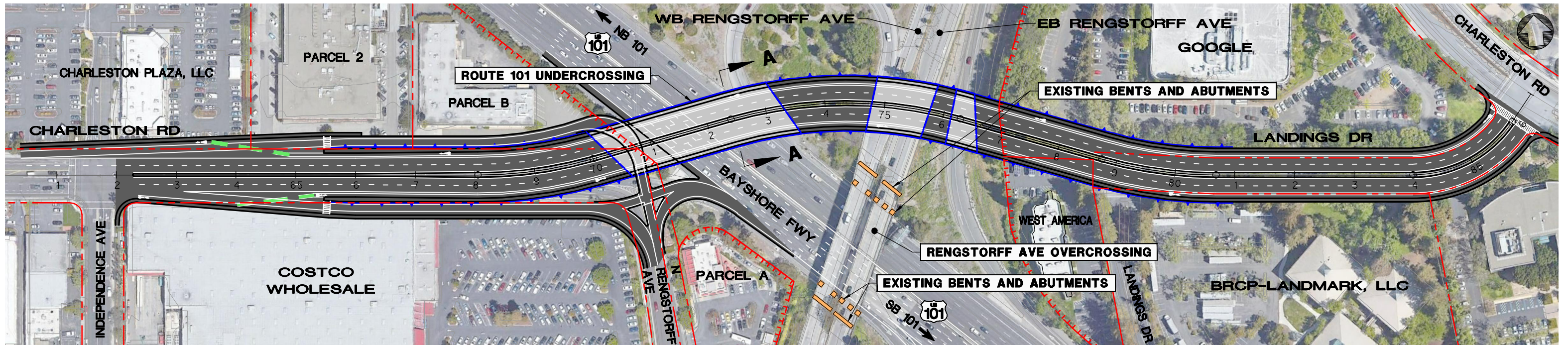
Figure 4: La Avenida Street at Stevens Creek at Bridge (Location 3)

Alternative 3A: Separate Transit and Bike/Pedestrian Bridges

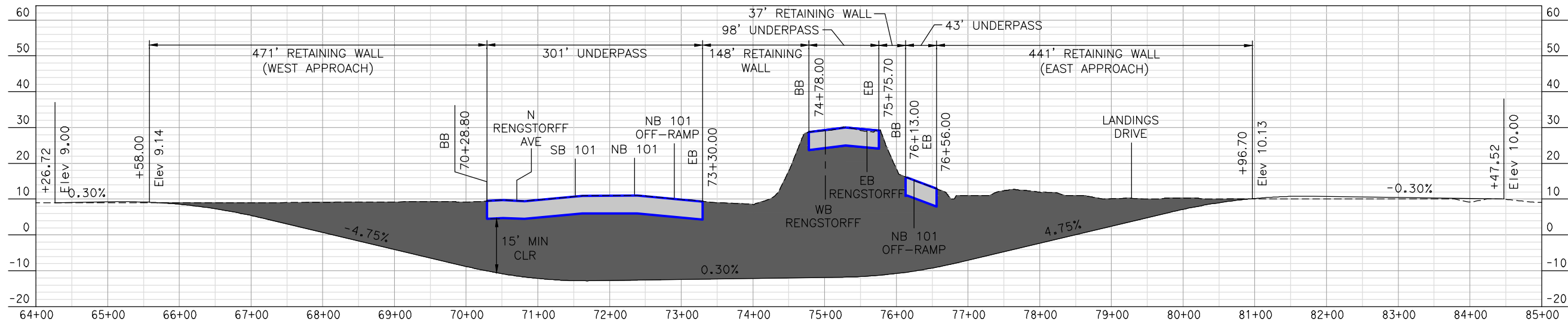
Alternative 3B: High-Level, Clear-Span Combined Bridge

Alternative 3C: Lower-Level Combined Bridge

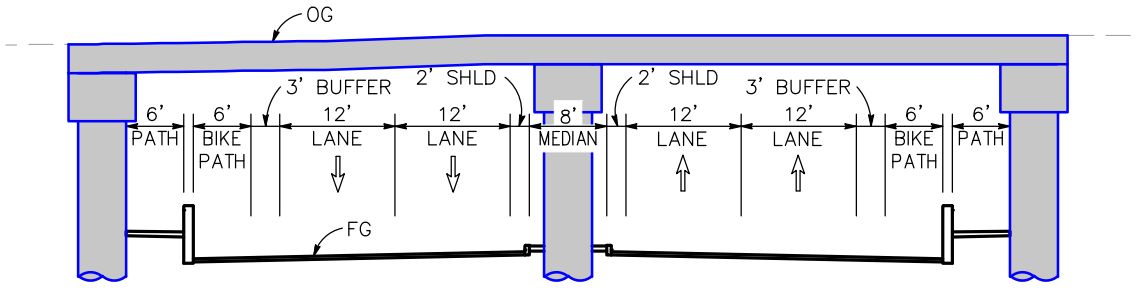
\\BKF-SU\vol4\2018\181698\_MT\_View\_N\_Bayshore\ENG\EXHIBITS\09 - Presentation Boards\Location 1C\_02-Charleston Road Underpass\_Alt2.dwg 03 May 2021 3:48:16pm lara



PLAN

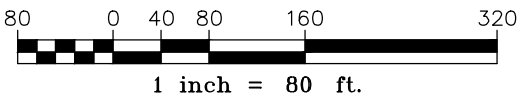


UNDERPASS PROFILE



CROSS SECTION A-A

NTS



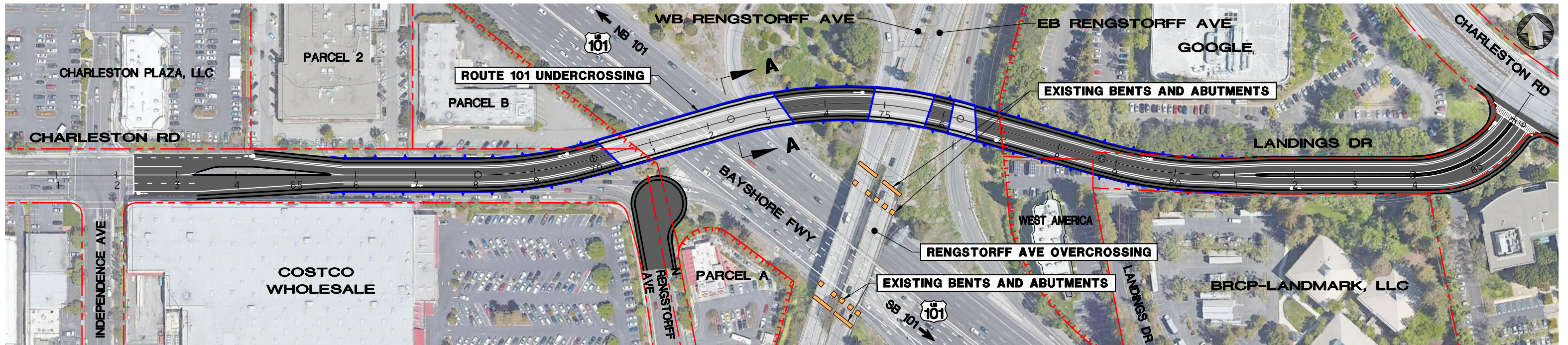
- LEGEND**
- EXISTING RIGHT OF WAY
  - RETAINING WALL
  - UNDERPASS
  - PAVING/WALLS

**CHARLESTON ROAD UNDERPASS - ALTERNATIVE 1A**  
**CURVED 4 LANE WITH GRADE SEPARATED PEDESTRIAN PATH**  
CITY OF MOUNTAIN VIEW, SANTA CLARA COUNTY  
MAY 2021

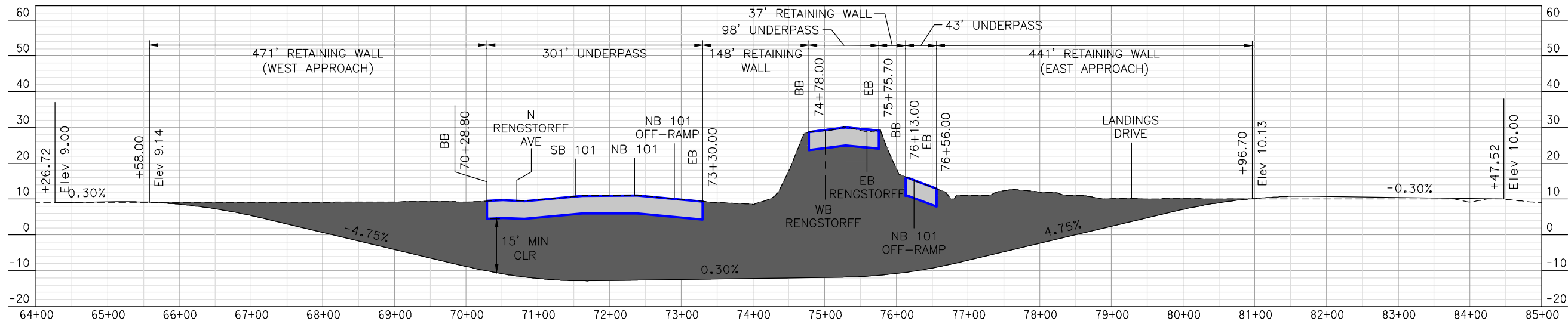
**FOR DISCUSSION PURPOSE ONLY,  
NOT FOR CONSTRUCTION**



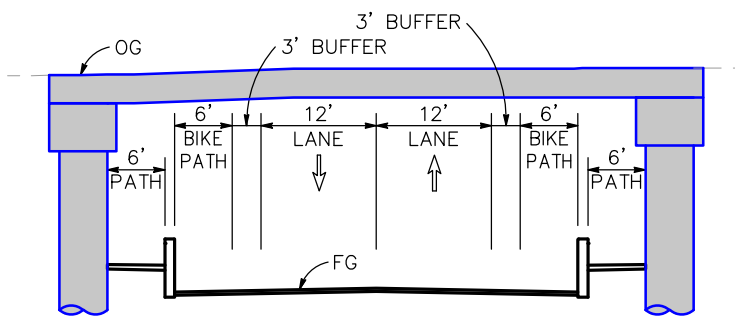
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PLAN

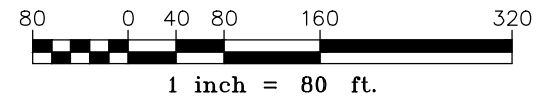


UNDERPASS PROFILE



CROSS SECTION A-A

NTS



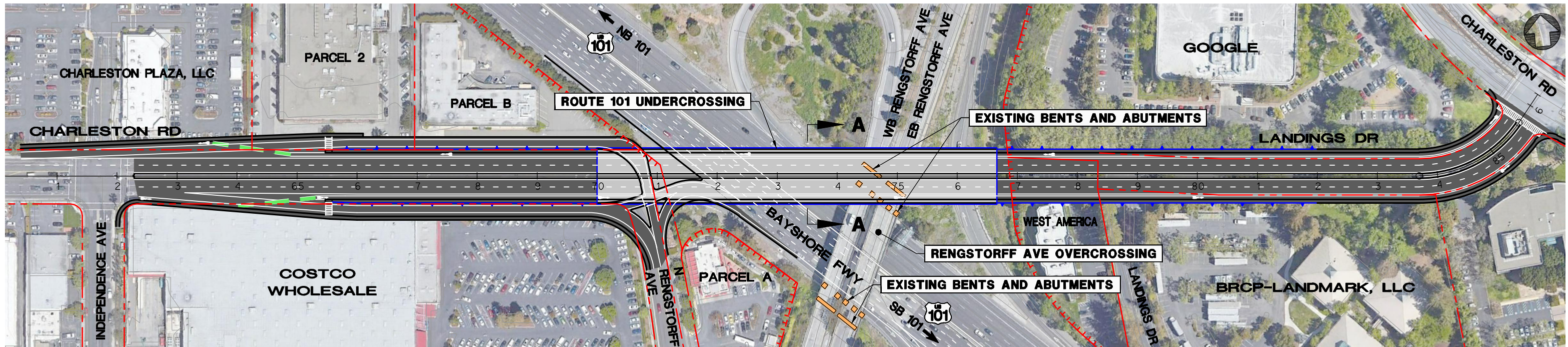
- LEGEND**
- EXISTING RIGHT OF WAY
  - RETAINING WALL
  - UNDERPASS
  - PAVING/WALLS

**CHARLESTON ROAD UNDERPASS - ALTERNATIVE 1B**  
**CURVED 2 LANE WITH GRADE SEPARATED PEDESTRIAN PATH**  
CITY OF MOUNTAIN VIEW, SANTA CLARA COUNTY  
MAY 2021

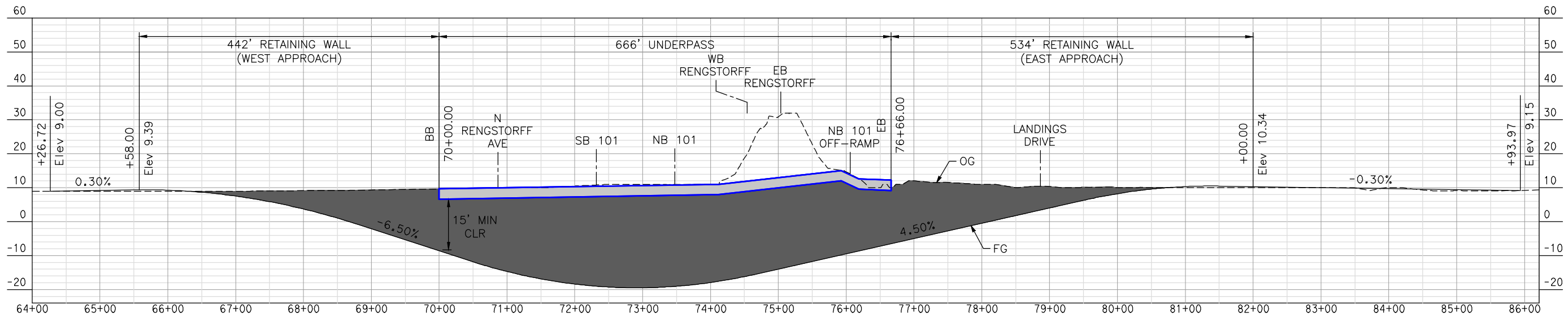
**FOR DISCUSSION PURPOSE ONLY,  
NOT FOR CONSTRUCTION**



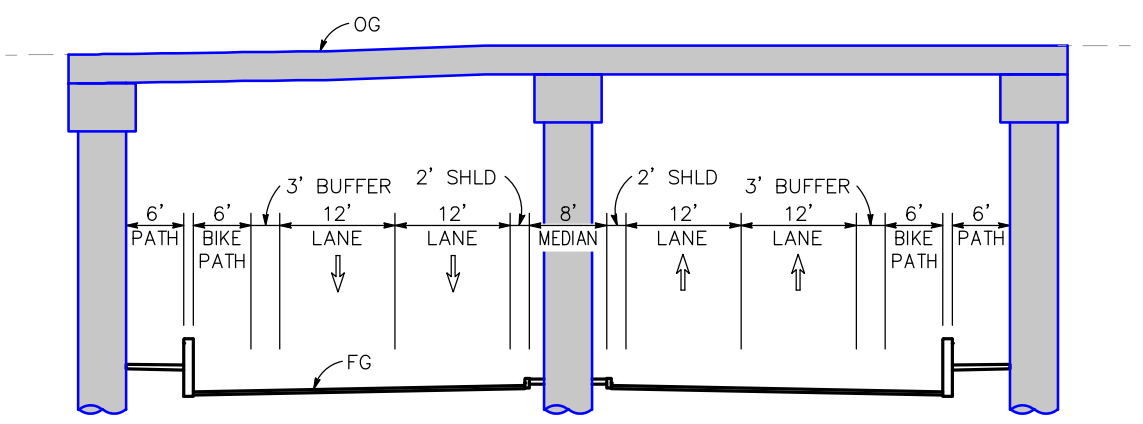
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PLAN

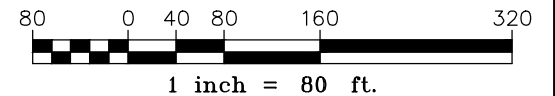


UNDERPASS PROFILE



CROSS SECTION A-A

NTS



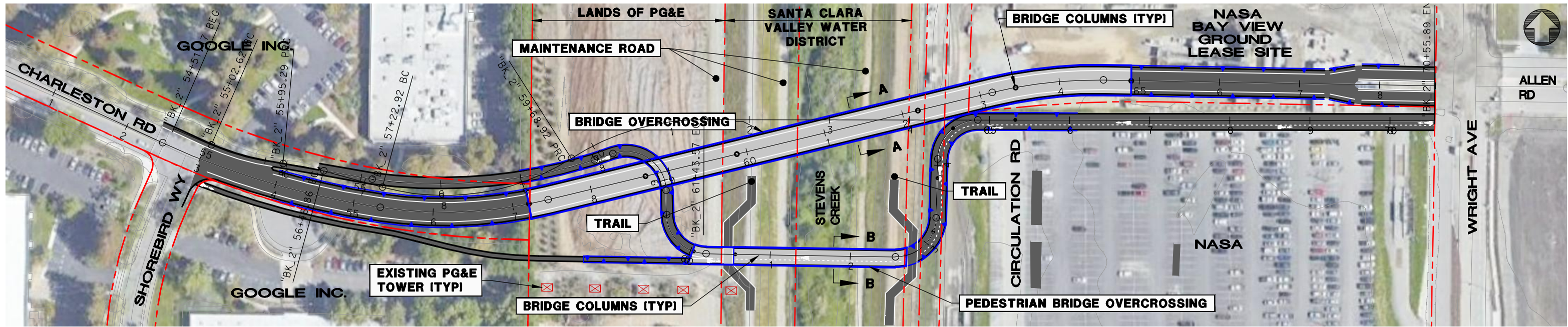
- LEGEND**
- EXISTING RIGHT OF WAY
  - RETAINING WALL
  - UNDERPASS
  - PAVING/WALLS

**CHARLESTON ROAD UNDERPASS - ALTERNATIVE 1C**  
**TANGENT 4 LANE WITH GRADE SEPARATED PEDESTRIAN PATH**  
CITY OF MOUNTAIN VIEW, SANTA CLARA COUNTY  
MAY 2021

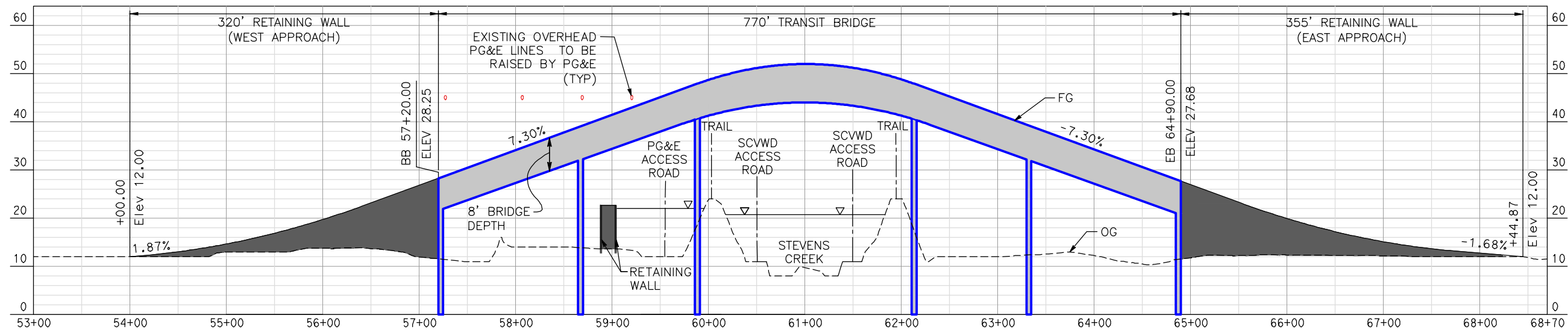
**FOR DISCUSSION PURPOSE ONLY,  
NOT FOR CONSTRUCTION**



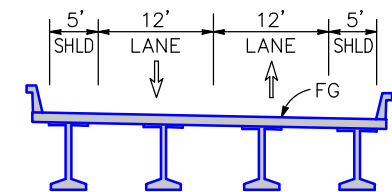
\\BKF-SU\vol4\2018\181698\_MT\_View\_N\_Bayshore\ENG\EXHIBITS\09 - Presentation Boards\Location\_2A\_01-Charleston Road Overcrossing\_Alt1.dwg 03 May 2021 3:55:24pm lara



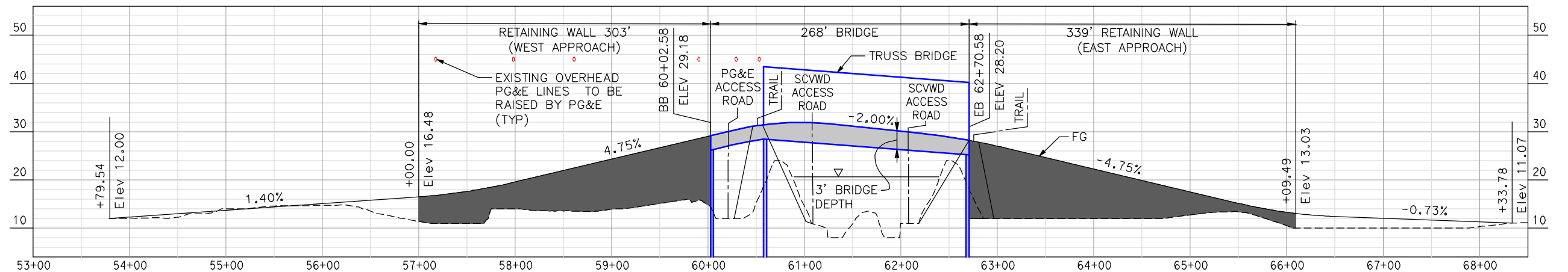
PLAN



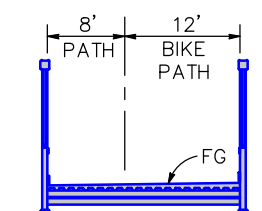
BRIDGE PROFILE



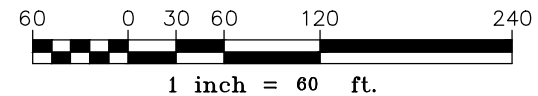
CROSS SECTION A-A  
NTS



PEDESTRIAN BRIDGE PROFILE



CROSS SECTION B-B  
NTS



**LEGEND**

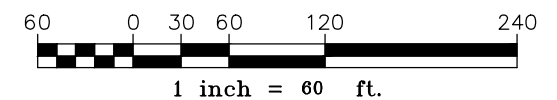
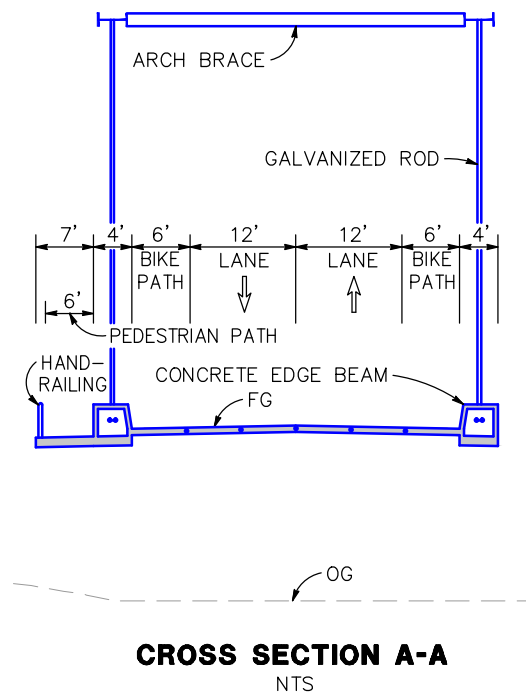
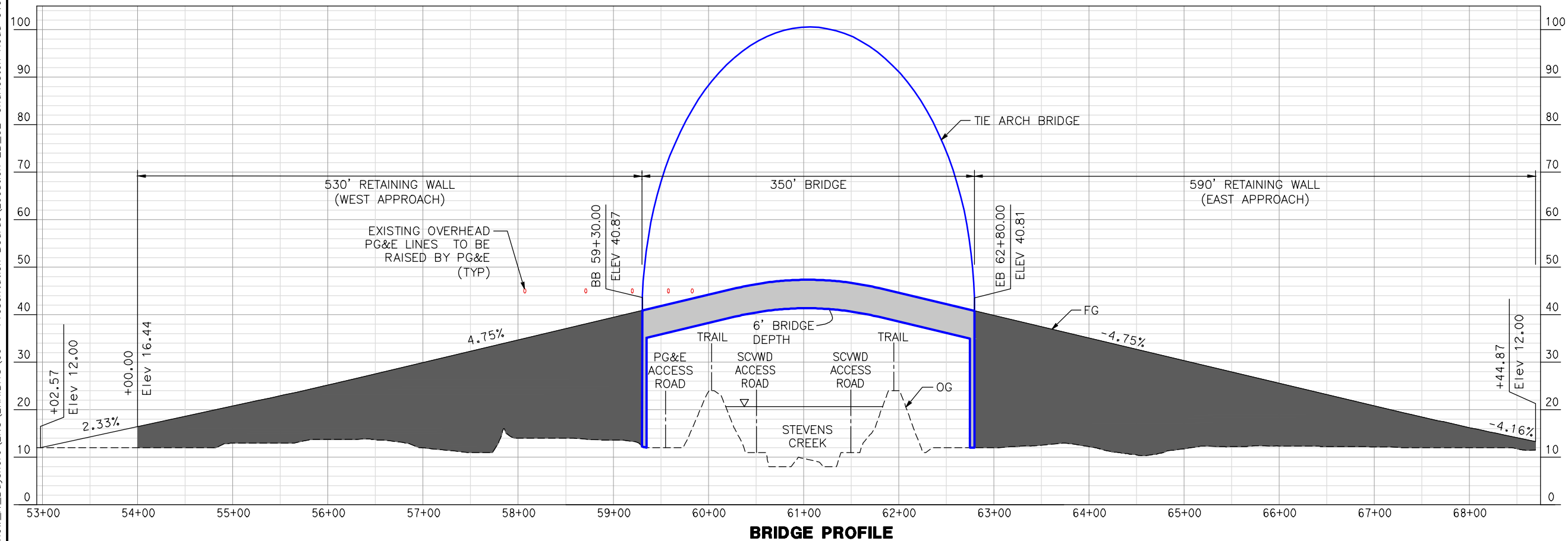
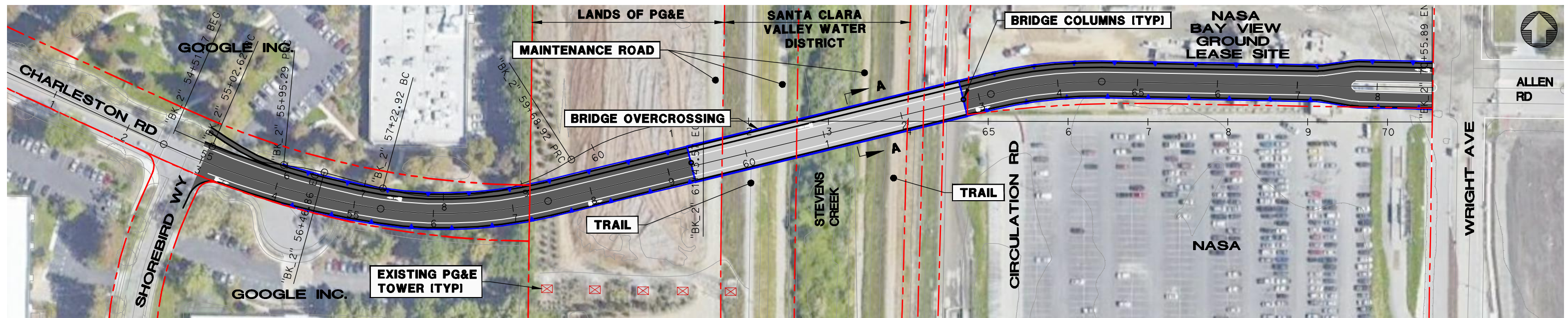
- EXISTING RIGHT OF WAY
- RETAINING WALL
- BRIDGE
- PAVING/WALLS

**CHARLESTON ROAD OVERCROSSING - ALTERNATIVE 2A**  
**2 LANE BRIDGE WITH SEPARATED PEDESTRIAN/BIKE BRIDGE**  
CITY OF MOUNTAIN VIEW, SANTA CLARA COUNTY  
MAY 2021





**FOR DISCUSSION PURPOSE ONLY,  
NOT FOR CONSTRUCTION**

CITY OF MOUNTAIN VIEW

**BKF 100+ YEARS**  
ENGINEERS / SURVEYORS / PLANNERS



**LEGEND**

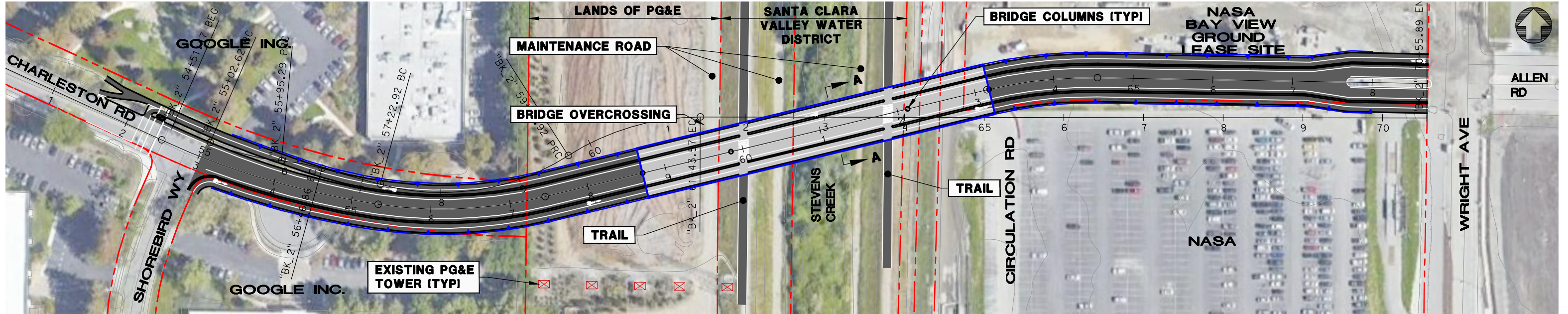
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	RETAINING WALL
	BRIDGE
	PAVING/WALLS

**CHARLESTON ROAD OVERCROSSING - ALTERNATIVE 2B**  
**2 LANE BRIDGE WITH PEDESTRIAN/BIKE PATHS**  
 CITY OF MOUNTAIN VIEW, SANTA CLARA COUNTY  
 MAY 2021

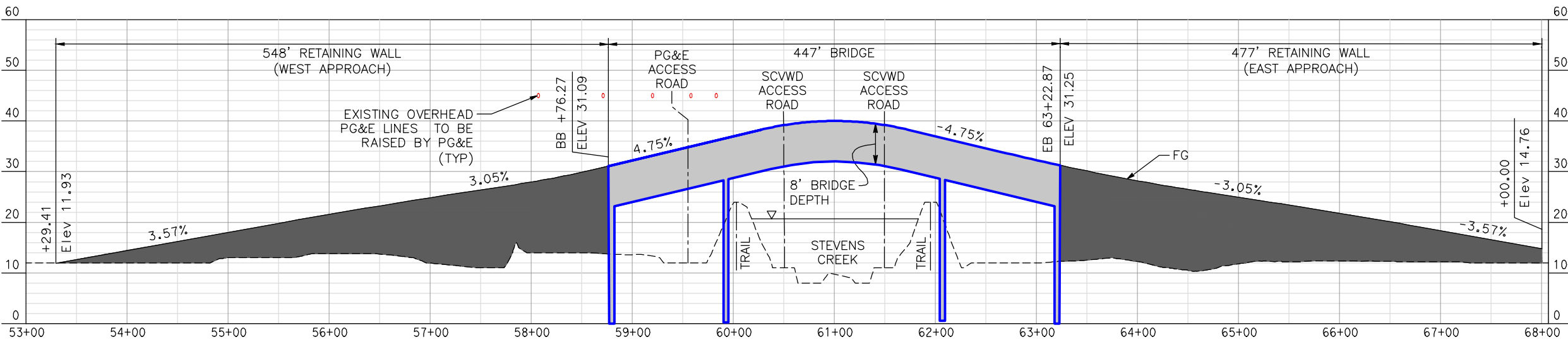
**FOR DISCUSSION PURPOSE ONLY,  
NOT FOR CONSTRUCTION**



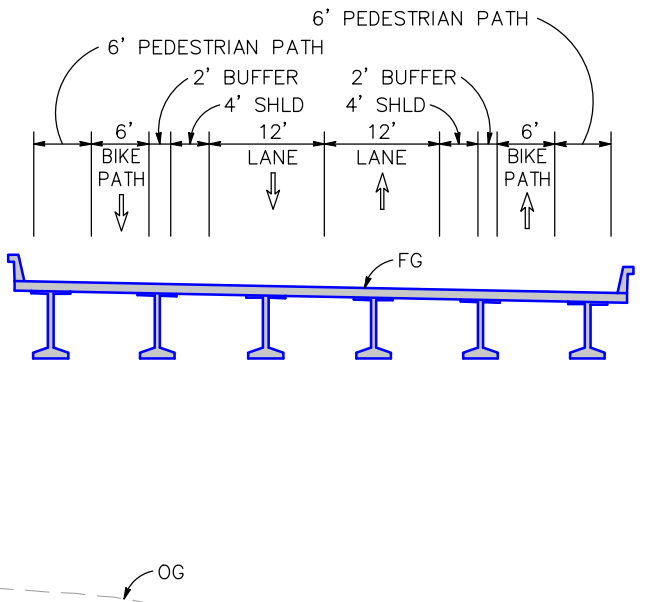
\\BKF-SU\vol4\2018\181698\_MT\_View\_N\_Bayshore\ENG\EXHIBITS\09 - Presentation Boards\Location 2C\_03-Charleston Road Overcrossing\_Alt3.dwg 03 May 2021 3:57:24pm lara



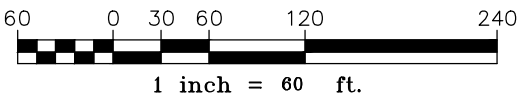
PLAN



BRIDGE PROFILE



CROSS SECTION A-A  
NTS



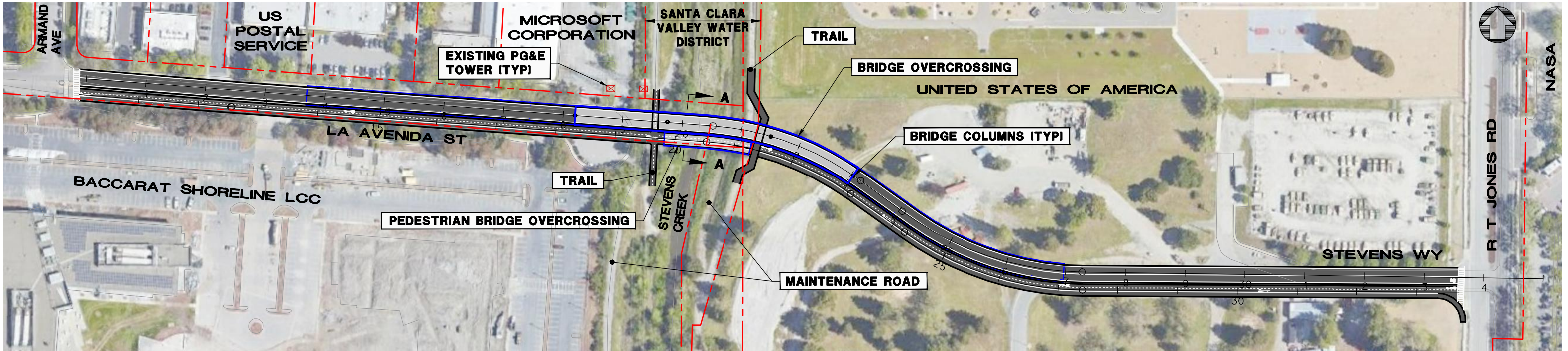
- LEGEND**
- EXISTING RIGHT OF WAY
  - RETAINING WALL
  - BRIDGE
  - PAVING/WALLS

**CHARLESTON ROAD OVERCROSSING - ALTERNATIVE 2C**  
**WIDE 2 LANE BRIDGE WITH AT-GRADE PEDESTRIAN/BIKE PATHS**  
CITY OF MOUNTAIN VIEW, SANTA CLARA COUNTY  
MAY 2021

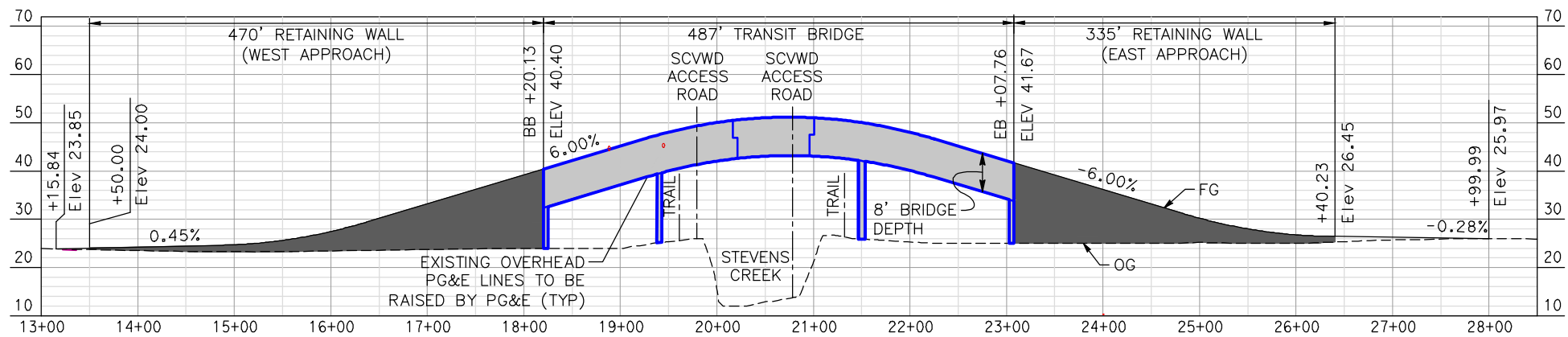
**FOR DISCUSSION PURPOSE ONLY,  
NOT FOR CONSTRUCTION**



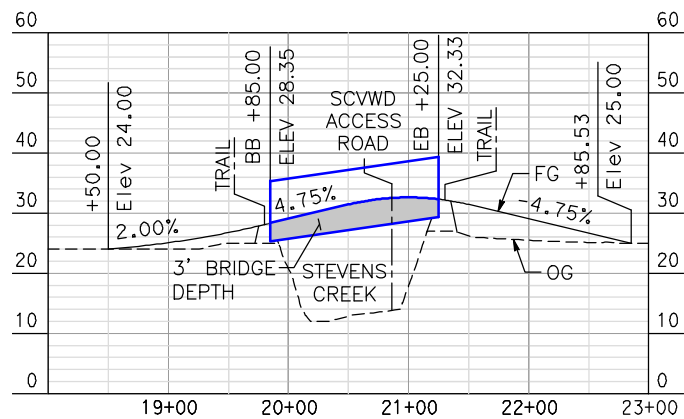
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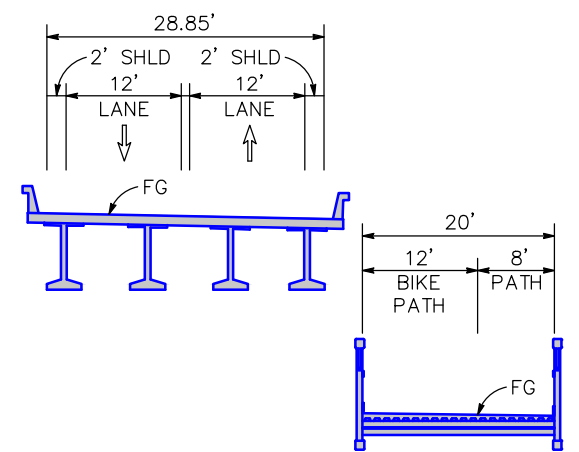
PLAN



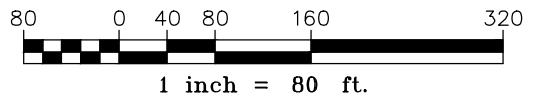
BRIDGE PROFILE



PEDESTRIAN BRIDGE PROFILE



CROSS SECTION A-A  
NTS



LEGEND

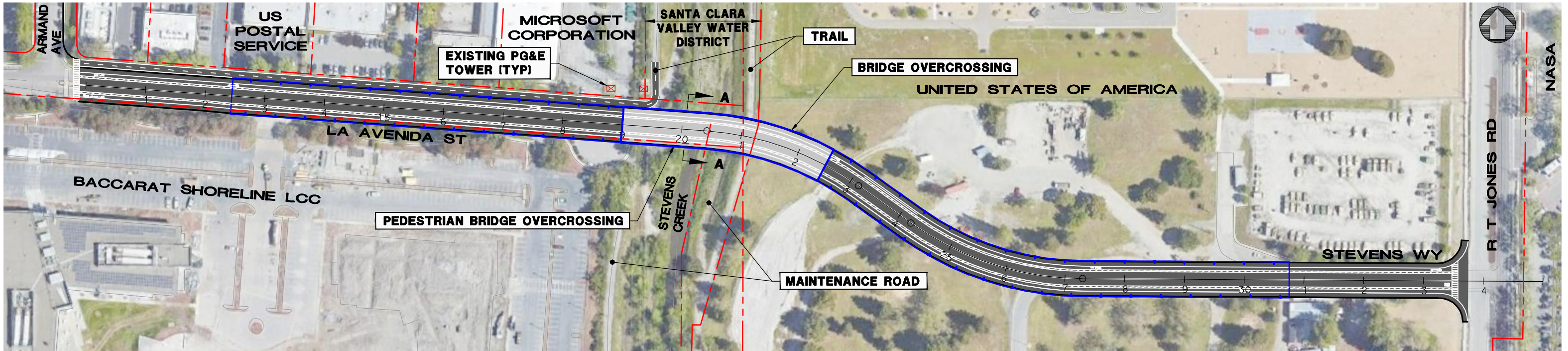
- EXISTING RIGHT OF WAY
- RETAINING WALL
- BRIDGE
- PAVING/WALLS

LA AVENIDA STREET OVERCROSSING - ALTERNATIVE 3A  
2 LANE BRIDGE WITH SEPARATED PEDESTRIAN/BIKE BRIDGE  
CITY OF MOUNTAIN VIEW, SANTA CLARA COUNTY  
MAY 2021

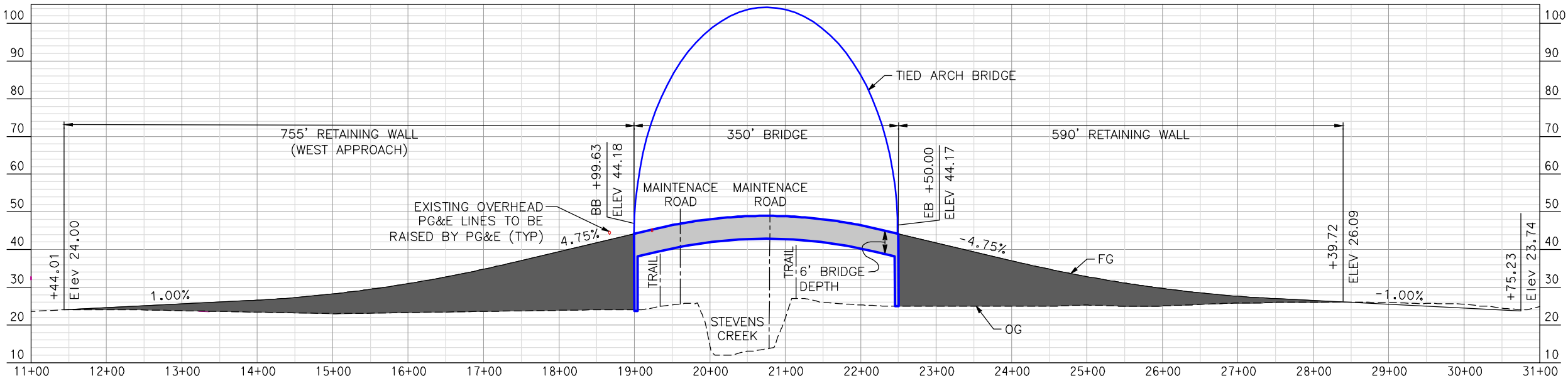
FOR DISCUSSION PURPOSE ONLY,  
NOT FOR CONSTRUCTION



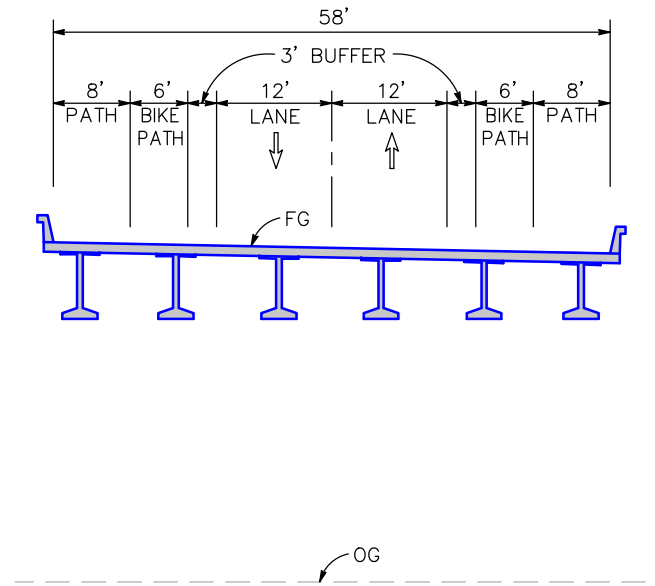
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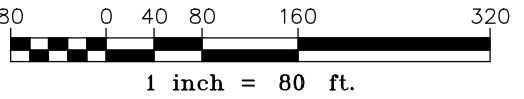
PLAN



BRIDGE PROFILE



CROSS SECTION A-A  
NTS



**LEGEND**

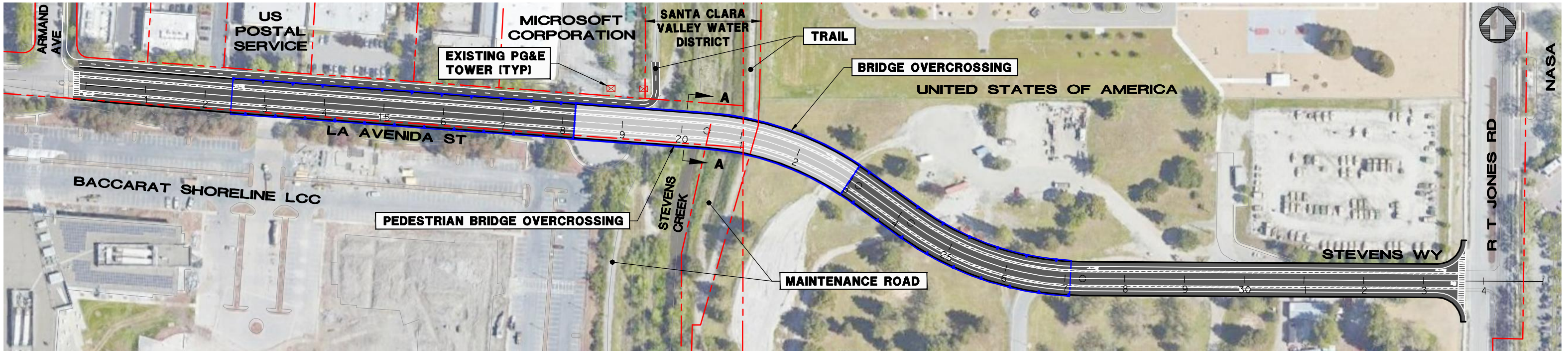
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	RETAINING WALL
	BRIDGE
	PAVING/WALLS

**LA AVENIDA STREET OVERCROSSING - ALTERNATIVE 3B**  
**2 LANE BRIDGE WITH PEDESTRIAN/BIKE PATHS**  
CITY OF MOUNTAIN VIEW, SANTA CLARA COUNTY  
MAY 2021

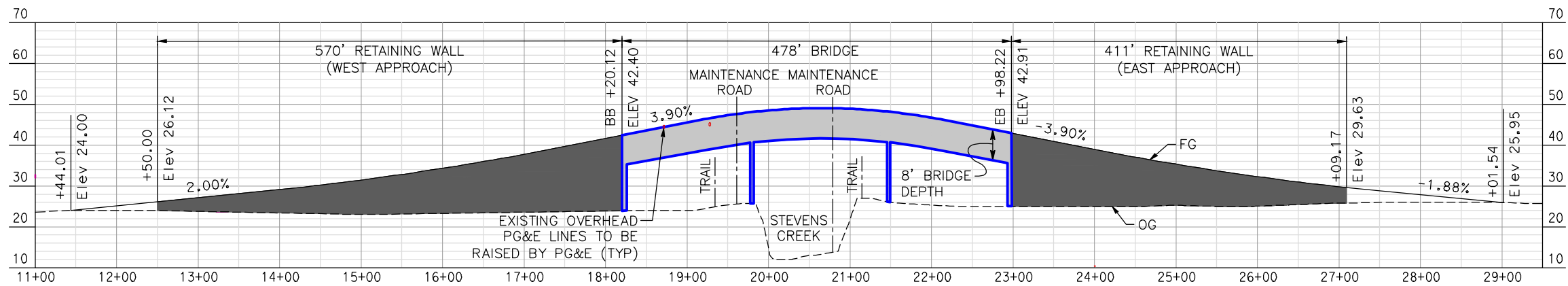
**FOR DISCUSSION PURPOSE ONLY,  
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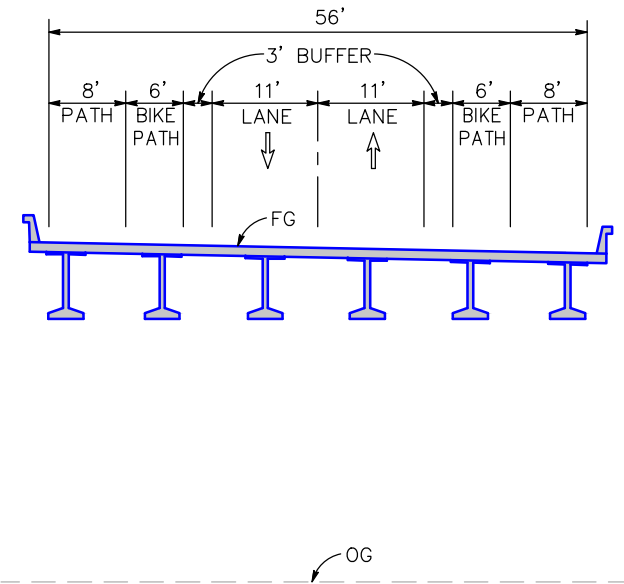
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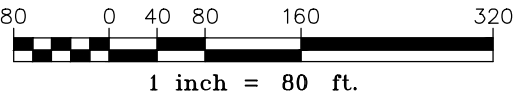
PLAN



BRIDGE PROFILE



CROSS SECTION A-A  
NTS



**LEGEND**

- EXISTING RIGHT OF WAY
- RETAINING WALL
- BRIDGE
- PAVING/WALLS

**LA AVENIDA STREET OVERCROSSING - ALTERNATIVE 3C**  
**2 LANE BRIDGE WITH AT-GRADE PEDESTRIAN/BIKE PATHS**  
CITY OF MOUNTAIN VIEW, SANTA CLARA COUNTY  
MAY 2021

**FOR DISCUSSION PURPOSE ONLY,  
NOT FOR CONSTRUCTION**



## ATTACHMENT B

### Screening Matrix

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

	Location 1 Charleston Road Underpass at Route 101			Location 2 Stevens Creek Transit Bridge at Charleston Road			Location 3 Stevens Creek Transit Bridge at La Avenida Street		
	Alternative 1	Alternative 2	Alternative 3	Alternative 1	Alternative 2	Alternative 3	Alternative 1	Alternative 2	Alternative 3
Description	<ul style="list-style-type: none"> <li>• Tangent Alignment Undercrossing</li> <li>• Two 12' lanes in each direction</li> <li>• 6' Class II Bike lanes w/ 3' buffer in both directions</li> <li>• Grade separated 6' sidewalk in both directions</li> <li>• 8' Bridge Columns in Median</li> <li>• 2' inside shoulder in each direction</li> <li>• 6.5% Max Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Curved Alignment Undercrossing</li> <li>• Two 12' lanes in each direction</li> <li>• 6' Class II Bike lanes w/ 3' buffer in both directions</li> <li>• 6' sidewalk in both directions</li> <li>• 8' Bridge Columns in Median</li> <li>• 2' inside shoulder in each direction</li> <li>• 4.75% Max Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Curved Alignment Undercrossing</li> <li>• One 12' lane in each direction</li> <li>• 6' Class II Bike lanes w/ 3' buffer in both directions</li> <li>• Grade separated 6' sidewalk in both directions</li> <li>• 8' Bridge Columns in Median</li> <li>• 4.75% Max Approach slopes</li> <li>• Removal of access to SB 101 at Rengstorff Ave.</li> </ul>	<ul style="list-style-type: none"> <li>• Clearspan vehicular California wide flange girder bridge with separated pedestrian/bike prefabricated steel truss bridge</li> <li>• One 12' lane with shoulders in each direction</li> <li>• Separated pedestrian/bike bridge (20' Wide) with at-grade connections to Stevens Creek trails</li> <li>• 7.3% Max Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Clearspan vehicular-Bike-Pedestrian tied arch bridge</li> <li>• 12' lane in both directions</li> <li>• 6' Class II Bike lanes in both directions</li> <li>• 6' Pedestrian path in both directions</li> <li>• 4.75% Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Clearspan vehicular-bike-pedestrian California wide flange girder bridge with at-grade connections to Stevens Creek trails</li> <li>• 12' lane in both directions</li> <li>• 6' Class II Bike lanes in both directions</li> <li>• 6' sidewalk in both directions</li> <li>• 4.75% Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Clearspan vehicular California wide flange girder bridge with separated pedestrian/bike prefabricated steel truss bridge</li> <li>• One 12' lane with shoulders in each direction</li> <li>• Separated pedestrian/bike bridge (20' Wide) with at-grade connections to Stevens Creek trails</li> <li>• 6% Max Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Clearspan vehicular-Bike-Pedestrian tied arch bridge</li> <li>• 12' lane in both directions</li> <li>• 6' Class II Bike lanes in both directions</li> <li>• 8' Pedestrian path in both directions</li> <li>• 4.75% Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Clearspan vehicular-bike-pedestrian California wide flange girder bridge with at-grade connections to Stevens Creek trails</li> <li>• 12' lane in both directions</li> <li>• 6' Class II Bike lanes in both directions</li> <li>• 8' sidewalk in both directions</li> <li>• 4.75% Approach slopes</li> </ul>
Traffic Circulation (Max score = 10)	6	6	2	8	9	9	7	8	8
Construction (Max score = 5)	1	2	3	4	2	5	5	2	5
Environmental Impact (Max score = 10)	5	5	6	4	5	5	4	5	5
Stakeholder Coordination (Max score = 5)	3	3	3	4	4	4	4	4	4
Right of Way and Utility Impacts (Max score = 10)	3	4	6	6	7	8	6	7	8
Cost (Max score = 10)	1	2	4	7	6	8	9	6	8
Schedule (Max score = 5)	3	3	3	4	4	4	4	4	4
TOTAL SCORE	22	25	27	37	37	43	39	36	42

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 1 Charleston Road/ Route 101 Underpass			
	Alternative 1	Alternative 2	Alternative 3
Description	<ul style="list-style-type: none"> <li>Tangent Alignment Undercrossing</li> <li>Two 12' lanes in each direction</li> <li>6' Class II Bike lanes w/ 3' buffer in both directions</li> <li>Grade separated 6' sidewalk in both directions</li> <li>8' Bridge Columns in Median</li> <li>2' inside shoulder in each direction</li> <li>6.5% Max Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>Curved Alignment Undercrossing</li> <li>Two 12' lanes in each direction</li> <li>6' Class II Bike lanes w/ 3' buffer in both directions</li> <li>6' sidewalk in both directions</li> <li>8' Bridge Columns in Median</li> <li>2' inside shoulder in each direction</li> <li>4.75% Max Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>Curved Alignment Undercrossing</li> <li>One 12' lane in each direction</li> <li>6' Class II Bike lanes w/ 3' buffer in both directions</li> <li>Grade separated 6' sidewalk in both directions</li> <li>8' Bridge Columns in Median</li> <li>4.75% Max Approach slopes</li> <li>Removal of access to SB 101 at Rengstorff Ave.</li> </ul>
Traffic Circulation (Max score = 10)	6	6	2
Construction (Max score = 5)	<p>1</p> <ul style="list-style-type: none"> <li>Top-Down construction method with the following construction sequence:               <ol style="list-style-type: none"> <li>Drill piles each side and center of underpass.</li> <li>Install pre-cast concrete cap beams and bridge slabs.</li> <li>Excavate between piles and beneath bridge beams. Install temporary and permanent struts or ground anchors as excavation progresses.</li> <li>Install permanent concrete struts at base of excavation and remove temporary struts or ground anchors.</li> </ol> </li> <li>Staged construction with pile installation and bridge construction during overnight and possibly longer lane closures of Route 101 and other roads.</li> <li>Significant traffic control and staging required for lane closures</li> <li>Road surface to be restored for traffic at the end of each work shift</li> <li>Reconstruction of Rengstorff Avenue bridge over Route 101 required due to impacts to existing abutment.</li> <li>Building/Structure Modifications on 1000 N. Rengstorff Ave (Costco) and 2171 Landings Drive (Google) due to roadway improvements</li> <li>Modifications for Landings Drive to Cul-de-sac</li> </ul>	<p>2</p> <ul style="list-style-type: none"> <li>Top-Down construction method with the following construction sequence:               <ol style="list-style-type: none"> <li>Drill piles each side and center of underpass.</li> <li>Install pre-cast concrete cap beams and bridge slabs.</li> <li>Excavate between piles and beneath bridge beams. Install temporary and permanent struts or ground anchors as excavation progresses.</li> <li>Install permanent concrete struts at base of excavation and remove temporary struts or ground anchors.</li> </ol> </li> <li>Staged construction with pile installation and bridge construction during overnight and possibly longer lane closures of Route 101 and other roads.</li> <li>Significant traffic control and staging required for lane closures</li> <li>Road surface to be restored for traffic at the end of each work shift</li> <li>No impact to existing Rengstorff Avenue bridge over Route 101.</li> <li>Building/Structure Modifications on 1000 N. Rengstorff Ave (Costco) and 2171 Landings Drive (Google) due to roadway improvements</li> <li>Modifications for Landings Drive to Cul-de-sac</li> </ul>	<p>3</p> <ul style="list-style-type: none"> <li>Top-Down construction method with the following construction sequence:               <ol style="list-style-type: none"> <li>Drill piles each side of underpass.</li> <li>Install pre-cast concrete cap beams and bridge slabs.</li> <li>Excavate between piles and beneath bridge beams. Install temporary and permanent struts or ground anchors as excavation progresses.</li> <li>Install permanent concrete struts at base of excavation and remove temporary struts or ground anchors.</li> </ol> </li> <li>Staged construction with pile installation and bridge construction during overnight and possibly longer lane closures of Route 101 and other roads.</li> <li>Significant traffic control and staging required for lane closures</li> <li>Road surface to be restored for traffic at the end of each work shift</li> <li>No impact to existing Rengstorff Avenue bridge over Route 101.</li> <li>Reduced structure width compared to other alternatives reducing construction cost and duration.</li> <li>Building/Structure Modifications on 1000 N. Rengstorff Ave (Costco) and 2171 Landings Drive (Google) due to roadway improvements</li> <li>Modifications for Landings Drive and N. Rengstorff Ave to Cul-de-sac</li> </ul>

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 1 Charleston Road/ Route 101 Underpass			
	Alternative 1	Alternative 2	Alternative 3
Environmental Impact (Max score = 10)	<p>5</p> <p>Environmental impacts to be determined at a later phase. Environmental studies to include the following:</p> <ul style="list-style-type: none"> <li>• Air Quality and GHG</li> <li>• Biological Resources</li> <li>• Cultural Resources</li> <li>• Hazardous Materials/Waste</li> <li>• Noise &amp; Vibration</li> <li>• Stormwater Management/ Water Quality</li> <li>• Community Impact Assessment</li> <li>• Visual Impact Assessment</li> <li>• Traffic</li> </ul>	<p>5</p> <p>Environmental impacts to be determined at a later phase. Environmental studies to include the following:</p> <ul style="list-style-type: none"> <li>• Air Quality and GHG</li> <li>• Biological Resources</li> <li>• Cultural Resources</li> <li>• Hazardous Materials/Waste</li> <li>• Noise &amp; Vibration</li> <li>• Stormwater Management/ Water Quality</li> <li>• Community Impact Assessment</li> <li>• Visual Impact Assessment</li> <li>• Traffic</li> </ul>	<p>6</p> <p>Environmental impacts to be determined at a later phase. Environmental studies to include the following:</p> <ul style="list-style-type: none"> <li>• Air Quality and GHG</li> <li>• Biological Resources</li> <li>• Cultural Resources</li> <li>• Hazardous Materials/Waste</li> <li>• Noise &amp; Vibration</li> <li>• Stormwater Management/ Water Quality</li> <li>• Community Impact Assessment</li> <li>• Visual Impact Assessment</li> <li>• Traffic</li> </ul>
Stakeholder Coordination (Max score = 5)	<p>3</p> <ul style="list-style-type: none"> <li>• City of Mountain View</li> <li>• Caltrans</li> <li>• Santa Clara County</li> <li>• Santa Clara Valley Water District</li> <li>• Surrounding Private Properties (see Parcel Impacts)</li> </ul>	<p>3</p> <ul style="list-style-type: none"> <li>• City of Mountain View</li> <li>• Caltrans</li> <li>• Santa Clara County</li> <li>• Santa Clara Valley Water District</li> <li>• Surrounding Private Properties (see Parcel Impacts)</li> </ul>	<p>3</p> <ul style="list-style-type: none"> <li>• City of Mountain View</li> <li>• Caltrans</li> <li>• Santa Clara County</li> <li>• Santa Clara Valley Water District</li> <li>• Surrounding Private Properties (see Parcel Impacts)</li> </ul>

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 1 Charleston Road/ Route 101 Underpass			
	Alternative 1	Alternative 2	Alternative 3
Right of Way and Utility Impacts (Max score = 10)	3	4	6
	<p><u>Parcel Impacts</u></p> <ul style="list-style-type: none"> <li>Impacts to APN 147-04-064, 1000 N. Rengstorff Ave (Costco), parking lot and building</li> <li>APN 147-02-014, significant property impacts (loss of access). Assuming full property take.</li> <li>APN 147-02-015, significant property impacts (loss of access). Assuming full property take.</li> <li>APN 147-02-018, Impacts to parking lot</li> <li>APN 116-08-102, 2171 Landings Drive (Google), impacts to parking lot and building. Assuming full property take.</li> <li>APN 116-04-105, Impacts to parking lot</li> <li>APN 116-04-013, Impacts to parking lot</li> <li>Impacts to Caltrans Restricted Right of Way</li> <li>Land for pump station and related access</li> </ul> <p><u>Easements</u></p> <ul style="list-style-type: none"> <li>Permanent Easements required</li> <li>Temporary Construction Easements required</li> <li>Ingress/Egress Easements Required</li> </ul> <p><u>Utilities</u></p> <p>Relocation of the following:</p> <ul style="list-style-type: none"> <li>PG&amp;E Gas, Overhead Electrical and Underground Electric</li> <li>AT&amp;T Overhead Communications and Underground Communications</li> <li>Comcast Overhead Communications and Underground Communications</li> <li>Verizon/MCI fiber optic facilities</li> <li>Google fiber optic facilities</li> <li>City of Mountain View Water Facilities</li> </ul>	<p><u>Parcel Impacts</u></p> <ul style="list-style-type: none"> <li>Impacts to APN 147-04-064, 1000 N. Rengstorff Ave (Costco), parking lot and building</li> <li>APN 147-02-014, significant property impacts (loss of access). Assuming full property take.</li> <li>APN 147-02-015, significant property impacts (loss of access). Assuming full property take.</li> <li>APN 147-02-018, Impacts to parking lot</li> <li>APN 116-08-102, 2171 Landings Drive (Google), impacts to parking lot.</li> <li>APN 116-04-105, Impacts to parking lot</li> <li>APN 116-04-013, Impacts to parking lot</li> <li>Impacts to Caltrans Restricted Right of Way</li> <li>Land for pumps station and related access</li> </ul> <p><u>Easements</u></p> <ul style="list-style-type: none"> <li>Permanent Easements required</li> <li>Temporary Construction Easements required</li> <li>Ingress/Egress Easements Required</li> </ul> <p><u>Utilities</u></p> <p>Relocation of the following:</p> <ul style="list-style-type: none"> <li>PG&amp;E Gas, Overhead Electrical and Underground Electric</li> <li>AT&amp;T Overhead Communications and Underground Communications</li> <li>Comcast Overhead Communications and Underground Communications</li> <li>Verizon/MCI fiber optic facilities</li> <li>Google fiber optic facilities</li> <li>City of Mountain View Water Facilities</li> </ul>	<p><u>Parcel Impacts</u></p> <ul style="list-style-type: none"> <li>Impacts to Costco parking lot.</li> <li>APN 147-02-014, significant property impacts (loss of access). Assuming full property take.</li> <li>APN 147-02-015, significant property impacts (loss of access). Assuming full property take.</li> <li>APN 147-02-018, Impacts to parking lot</li> <li>APN 116-08-102, 2171 Landing Drive (Google), impacts to parking lot</li> <li>APN 116-04-105, Impacts to parking lot</li> <li>APN 116-04-013, Impacts to parking lot</li> <li>Impacts to Caltrans Restricted Right of Way</li> <li>Land for pumps station and related access</li> </ul> <p><u>Easements</u></p> <ul style="list-style-type: none"> <li>Permanent Easements required</li> <li>Temporary Construction Easements required</li> <li>Ingress/Egress Easements Required</li> </ul> <p><u>Utilities</u></p> <p>Relocation of the following:</p> <ul style="list-style-type: none"> <li>PG&amp;E Gas, Overhead Electrical and Underground Electric</li> <li>AT&amp;T Overhead Communications and Underground Communications</li> <li>Comcast Overhead Communications and Underground Communications</li> <li>Verizon/MCI fiber optic facilities</li> <li>Google fiber optic facilities</li> <li>City of Mountain View Water Facilities</li> </ul>
Cost (Max score = 10)	1	2	4
	<p>Roadway Items = \$34 M</p> <p>Structure Items = \$110 M</p> <p>Right of Way = \$26 M</p> <p>Utility Relocation = \$32 M</p> <p><u>TOTAL \$202 M</u></p>	<p>Roadway Items = \$33 M</p> <p>Structure Items = \$95 M</p> <p>Right of Way = \$18 M</p> <p>Utility Relocation = \$32 M</p> <p><u>TOTAL \$178 M</u></p>	<p>Roadway Items = \$20 M</p> <p>Structure Items = \$75 M</p> <p>Right of Way = \$12 M</p> <p>Utility Relocation = \$25 M</p> <p><u>TOTAL \$133 M</u></p>

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 1 Charleston Road/ Route 101 Underpass			
	Alternative 1	Alternative 2	Alternative 3
Schedule (Max score = 5)	3	3	3
	Environmental/Permitting = 18 Months Design Duration = 24 Months Right of Way = 14 Months Utility Relocation Duration = 18 Months Construction Duration = 42 Months Note: Some tasks overlap  <u>TOTAL DURATION = 90 Months (7.5 Years)</u>	Environmental/Permitting = 18 Months Design Duration = 24 Months Right of Way = 14 Months Utility Relocation Duration = 18 Months Construction Duration = 36 Months Note: Some tasks overlap  <u>TOTAL DURATION = 84 Months (7 Years)</u>	Environmental/Permitting = 18 Months Design Duration = 24 Months Right of Way = 12 Months Utility Relocation Duration = 16 Months Construction Duration = 30 Months Note: Some tasks overlap  <u>TOTAL DURATION = 78 Months (6.5 Years )</u>
Total Score	22	25	27

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 2 Stevens Creek Transit Bridge at Charleston Road			
	Alternative 1	Alternative 2	Alternative 3
Description	<ul style="list-style-type: none"> <li>• Clearspan vehicular California wide flange girder bridge with separated pedestrian/bike prefabricated steel truss bridge</li> <li>• One 12' lane with shoulders in each direction</li> <li>• Separated pedestrian/bike bridge (20' Wide) with at-grade connections to Stevens Creek trails</li> <li>• 7.3% Max Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Clearspan vehicular-Bike-Pedestrian tied arch bridge</li> <li>• 12' lane in both directions</li> <li>• 6' Class II Bike lanes in both directions</li> <li>• 6' Pedestrian path in both directions</li> <li>• 4.75% Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Clearspan vehicular-bike-pedestrian California wide flange girder bridge with at-grade connections to Stevens Creek trails</li> <li>• 12' lane in both directions</li> <li>• 6' Class II Bike lanes in both directions</li> <li>• 6' sidewalk in both directions</li> <li>• 4.75% Approach slopes</li> </ul>
Traffic Circulation (Max score = 10)	8	9	9
Construction (Max score = 5)	4	2	5
	<ul style="list-style-type: none"> <li>• Road Bridge - cast-in-place box girder or precast concrete "California Wide Flange Girder" structure with precast concrete span over creek.</li> <li>• Pedestrian/Bike Bridge - prefabricated steel single span bridge.</li> <li>• Retaining Walls - type to be determined but standard type anticipated</li> <li>• All structure are standard structure types commony used in California.</li> <li>• Deep foundations anticipated.</li> <li>• All structures clear-span over creek resulting in no structural work within the creek.</li> <li>• Some foundation elements are within the creek berms, requiring modification of berms and coordination with District.</li> <li>• Pedestrian/Bike bridge may have to be two separate adjacent structures due to required width.</li> <li>• Overhead electrical lines after raising will restrict construction activities dueto temporary clearance requirements. Low overhead foundation equipment and pile splicing may be required.</li> </ul>	<ul style="list-style-type: none"> <li>• Combined Bridge - single span bridge clear-span over creek and trails is too long for standard structure type. Steel tied arch bridge is shown in exhibits.</li> <li>• Retaining Walls - type to be determined but standard type anticipated</li> <li>• While there are examples of bridges of this type and span, there are no structure types that are standard or commonly used. This reduces the number of contractors who are able perform this work and increases the uncertainty of cost and schedule. Alternative contract methods such as "Construction Manager/General Contractor" (CM/GC) where a contractor is involved during the design phase of the project would be recommended to reduce these uncertainties.</li> <li>• Significant bridge structure height above roadway provides opportunity for "signature span" or "gateway structure".</li> <li>• Deep foundations anticipated.</li> <li>• Structure clear-span over creek and trails resulting in no modifications to trails or berms.</li> <li>• Overhead electrical lines after raising will restrict construction activities due to temporary clearance requirements. Low overhead foundation equipment and pile splicing may be required. Use of large cranes is required for bridge installation and may require additional raising of overhead lines or temproary de-energizing during crane operations.</li> </ul>	<ul style="list-style-type: none"> <li>• Combined Bridge - cast-in-place box girder or precast concrete "California Wide Flange Girder" structure with precast concrete span over creek.</li> <li>• Retaining Walls - type to be determined but standard type anticipated</li> <li>• Structure types proposed are standard structure types commony used in California.</li> <li>• Deep foundations anticipated.</li> <li>• Lower, shorter bridge structure reduces cost and overall footprint compared to Alternative A.</li> <li>• Structure clear-spans over creek resulting in no structural work within the creek.</li> <li>• Some foundation elements are within the creek berms, requiring modification of berms and coordination with District.</li> <li>• Overhead electrical lines after raising will restrict construction activities dueto temporary clearance requirements. Low overhead foundation equipment and pile splicing may be required.</li> </ul>

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 2 Stevens Creek Transit Bridge at Charleston Road			
	Alternative 1	Alternative 2	Alternative 3
<b>Environmental Impact</b> (Max score = 10)	<p><b>4</b></p> <p>Environmental impacts to be determined at a later phase. Environmental studies to include the following:</p> <ul style="list-style-type: none"> <li>• Air Quality and GHG</li> <li>• Biological Resources</li> <li>• Cultural Resources</li> <li>• Hazardous Materials/Waste</li> <li>• Noise &amp; Vibration</li> <li>• Stormwater Management/ Water Quality</li> <li>• Community Impact Assessment</li> <li>• Visual Impact Assessment</li> <li>• Traffic</li> </ul>	<p><b>5</b></p> <p>Environmental impacts to be determined at a later phase. Environmental studies to include the following:</p> <ul style="list-style-type: none"> <li>• Air Quality and GHG</li> <li>• Biological Resources</li> <li>• Cultural Resources</li> <li>• Hazardous Materials/Waste</li> <li>• Noise &amp; Vibration</li> <li>• Stormwater Management/ Water Quality</li> <li>• Community Impact Assessment</li> <li>• Visual Impact Assessment</li> <li>• Traffic</li> </ul>	<p><b>5</b></p> <p>Environmental impacts to be determined at a later phase. Environmental studies to include the following:</p> <ul style="list-style-type: none"> <li>• Air Quality and GHG</li> <li>• Biological Resources</li> <li>• Cultural Resources</li> <li>• Hazardous Materials/Waste</li> <li>• Noise &amp; Vibration</li> <li>• Stormwater Management/ Water Quality</li> <li>• Community Impact Assessment</li> <li>• Visual Impact Assessment</li> <li>• Traffic</li> </ul>
<b>Stakeholder Coordination</b> (Max score = 5)	<p><b>4</b></p> <ul style="list-style-type: none"> <li>• City of Mountain View</li> <li>• Santa Clara Valley Water</li> <li>• PG&amp;E</li> <li>• Santa Clara County</li> <li>• Surrounding Private Properties (see Parcel Impacts)</li> <li>• NASA Ames</li> </ul>	<p><b>4</b></p> <ul style="list-style-type: none"> <li>• City of Mountain View</li> <li>• Santa Clara Valley Water</li> <li>• PG&amp;E</li> <li>• Santa Clara County</li> <li>• Surrounding Private Properties (see Parcel Impacts)</li> <li>• NASA Ames</li> </ul>	<p><b>4</b></p> <ul style="list-style-type: none"> <li>• City of Mountain View</li> <li>• Santa Clara Valley Water</li> <li>• PG&amp;E</li> <li>• Santa Clara County</li> <li>• Surrounding Private Properties (see Parcel Impacts)</li> <li>• NASA Ames</li> </ul>
<b>Right of Way and Utility Impacts</b> (Max score = 10)	<p><b>6</b></p> <p><u>Parcel Impacts</u></p> <ul style="list-style-type: none"> <li>• Minor Impacts to APN 116-11-012.</li> <li>• Significant impacts to PG&amp;E Property</li> <li>• Significant impacts to of SCVWD Property</li> <li>• Impacts to NASA Ames for bridge approach.</li> </ul> <p><u>Easements</u></p> <ul style="list-style-type: none"> <li>• Permanent Easements required</li> <li>• Temporary Construction Easements required</li> <li>• Ingress/Egress Easements Required</li> </ul> <p><u>Utilities</u></p> <p>Relocation of the following:</p> <ul style="list-style-type: none"> <li>• PG&amp;E Gas, Overhead Electrical and Underground Electric</li> <li>• PG&amp;E Overhead Transmission Facilities</li> <li>• AT&amp;T Communications</li> <li>• Verizon/MCI fiber optic facilities</li> <li>• Centurylink fiber optic facilities</li> <li>• Google fiber optic facilities</li> <li>• City of Mountain View Water Facilities</li> </ul>	<p><b>7</b></p> <p><u>Parcel Impacts</u></p> <ul style="list-style-type: none"> <li>• Minor Impacts to APN 116-11-012.</li> <li>• Significant impacts to PG&amp;E Property</li> <li>• Significant impacts to SCVWD Property</li> <li>• Impacts to NASA Ames for bridge approach.</li> </ul> <p><u>Easements</u></p> <ul style="list-style-type: none"> <li>• Permanent Easements required</li> <li>• Temporary Construction Easements required</li> <li>• Ingress/Egress Easements Required</li> </ul> <p><u>Utilities</u></p> <p>Relocation of the following:</p> <ul style="list-style-type: none"> <li>• PG&amp;E Gas, Overhead Electrical and Underground Electric</li> <li>• PG&amp;E Overhead Transmission Facilities</li> <li>• AT&amp;T Communications</li> <li>• Verizon/MCI fiber optic facilities</li> <li>• Centurylink fiber optic facilities</li> <li>• Google fiber optic facilities</li> <li>• City of Mountain View Water Facilities</li> </ul>	<p><b>8</b></p> <p><u>Parcel Impacts</u></p> <ul style="list-style-type: none"> <li>• Minor Impacts to APN 116-11-012.</li> <li>• Significant impacts to PG&amp;E Property</li> <li>• Significant impacts to SCVWD Property</li> <li>• Impacts to NASA Ames for bridge approach.</li> </ul> <p><u>Easements</u></p> <ul style="list-style-type: none"> <li>• Permanent Easements required</li> <li>• Temporary Construction Easements required</li> <li>• Ingress/Egress Easements Required</li> </ul> <p><u>Utilities</u></p> <p>Relocation of the following:</p> <ul style="list-style-type: none"> <li>• PG&amp;E Gas, Overhead Electrical and Underground Electric</li> <li>• PG&amp;E Overhead Transmission Facilities</li> <li>• AT&amp;T Communications</li> <li>• Verizon/MCI fiber optic facilities</li> <li>• Centurylink fiber optic facilities</li> <li>• Google fiber optic facilities</li> <li>• City of Mountain View Water Facilities</li> </ul>

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 2 Stevens Creek Transit Bridge at Charleston Road			
	Alternative 1	Alternative 2	Alternative 3
Cost (Max score = 10)	7  Roadway Items = \$4 M Structure Items = \$35 M Right of Way = \$13 M Utility Relocation = \$ 17 M  <u>TOTAL \$ 69 M</u>	6  Roadway Items = \$7 M Structure Items = \$ 43 M Right of Way = \$6 M Utility Relocation = \$ 17 M  <u>TOTAL \$ 73 M</u>	8  Roadway Items = \$7 M Structure Items = \$ 28 M Right of Way = \$8 M Utility Relocation = \$16 M  <u>TOTAL \$ 59 M</u>
Schedule (Max score = 5)	4  Environmental/Permitting = 18 Months Design Duration = 18 Months Right of Way = 6 Months Utility Relocation Duration = 18 Months Construction Duration = 27 Months Note: Some tasks overlap  <u>TOTAL DURATION = 69 Months (5.75 Years)</u>	4  Environmental/Permitting = 18 Months Design Duration = 18 Months Right of Way = 6 Months Utility Relocation Duration = 18 Months Construction Duration = 24 Months Note: Some tasks overlap  <u>TOTAL DURATION = 66 Months (5.5 Years)</u>	4  Environmental/Permitting = 18 Months Design Duration = 18 Months Right of Way = 6 Months Utility Relocation Duration = 18 Months Construction Duration = 24 Months Note: Some tasks overlap  <u>TOTAL DURATION = 66 Months (5.5 Years )</u>
Total Score	37	37	43

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 3 Stevens Creek Transit Bridge at La Avenida			
	Alternative 1	Alternative 2	Alternative 3
Description	<ul style="list-style-type: none"> <li>• Clearspan vehicular California wide flange girder bridge with separated pedestrian/bike prefabricated steel truss bridge</li> <li>• One 12' lane with shoulders in each direction</li> <li>• Separated pedestrian/bike bridge (20' Wide) with at-grade connections to Stevens Creek trails</li> <li>• 6% Max Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Clearspan vehicular-Bike-Pedestrian tied arch bridge</li> <li>• 12' lane in both directions</li> <li>• 6' Class II Bike lanes in both directions</li> <li>• 8' Pedestrian path in both directions</li> <li>• 4.75% Approach slopes</li> </ul>	<ul style="list-style-type: none"> <li>• Clearspan vehicular-bike-pedestrian California wide flange girder bridge with at-grade connections to Stevens Creek trails</li> <li>• 12' lane in both directions</li> <li>• 6' Class II Bike lanes in both directions</li> <li>• 8' sidewalk in both directions</li> <li>• 4.75% Approach slopes</li> </ul>
Traffic Circulation (Max score = 10)	7	8	8
Construction (Max score = 5)	5	2	5
	<ul style="list-style-type: none"> <li>• Road Bridge - cast-in-place box girder or precast concrete "California Wide Flange Girder" structure with precast concrete span over creek.</li> <li>• Pedestrian/Bike Bridge - prefabricated steel single span bridge.</li> <li>• Retaining Walls - type to be determined but standard type anticipated</li> <li>• All structure are standard structure types commony used in California.</li> <li>• Deep foundations anticipated.</li> <li>• All structures clear-span over creek resulting in no structural work within the creek.</li> <li>• Some foundation elements adacent to creek may require coordination with District.</li> <li>• Pedestrian/Bike bridge may have to be two separate adjacent structures due to required width.</li> <li>• Overhead electrical lines after raising will restrict construction activities dueto temporary clearance requirements. Low overhead foundation equipment and pile splicing may be required.</li> </ul>	<ul style="list-style-type: none"> <li>• Combined Bridge - single span bridge clear-span over creek and trails is too long for standard structure type. Steel tied arch bridge is shown in exhibits.</li> <li>• Retaining Walls - type to be determined but standard type anticipated</li> <li>• While there are examples of bridges of this type and span, there are no structure types that are standard or commonly used. This reduces the number of contractors who are able perform this work and increases the uncertainty of cost and schedule. Alternative contract methods such as "Construction Manager/General Contractor" (CM/GC) where a contractor is involved during the design phase of the project would be recommended to reduce these uncertainties.</li> <li>• Significant bridge structure height above roadway provides opportunity for "signature span" or "gateway structure".</li> <li>• Deep foundations anticipated.</li> <li>• Structure clear-span over creek and trails resulting in no modifications to trails or berms.</li> <li>• Overhead electrical lines after raising will restrict construction activities due to temporary clearance requirements. Low overhead foundation equipment and pile splicing may be required. Use of large cranes is required for bridge installation and may require additional raising of overhead lines or temproary de-energizing during crane operations.</li> </ul>	<ul style="list-style-type: none"> <li>• Combined Bridge - cast-in-place box girder or precast concrete "California Wide Flange Girder" structure with precast concrete span over creek.</li> <li>• Retaining Walls - type to be determined but standard type anticipated</li> <li>• Structure types proposed are standard structure types commony used in California.</li> <li>• Deep foundations anticipated.</li> <li>• Similar structures to Alternative A.</li> <li>• Structure clear-spans over creek resulting in no structural work within the creek.</li> <li>• Some foundation elements adacent to creek may require coordination with District..</li> <li>• Overhead electrical lines after raising will restrict construction activities dueto temporary clearance requirements. Low overhead foundation equipment and pile splicing may be required.</li> </ul>

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 3 Stevens Creek Transit Bridge at La Avenida			
	Alternative 1	Alternative 2	Alternative 3
Environmental Impact (Max score = 10)	<p>4</p> <p>Environmental impacts to be determined at a later phase. Environmental studies to include the following:</p> <ul style="list-style-type: none"> <li>• Air Quality and GHG</li> <li>• Biological Resources</li> <li>• Cultural Resources</li> <li>• Hazardous Materials/Waste</li> <li>• Noise &amp; Vibration</li> <li>• Stormwater Management/ Water Quality</li> <li>• Community Impact Assessment</li> <li>• Visual Impact Assessment</li> <li>• Traffic</li> </ul>	<p>5</p> <p>Environmental impacts to be determined at a later phase. Environmental studies to include the following:</p> <ul style="list-style-type: none"> <li>• Air Quality and GHG</li> <li>• Biological Resources</li> <li>• Cultural Resources</li> <li>• Hazardous Materials/Waste</li> <li>• Noise &amp; Vibration</li> <li>• Stormwater Management/ Water Quality</li> <li>• Community Impact Assessment</li> <li>• Visual Impact Assessment</li> <li>• Traffic</li> </ul>	<p>5</p> <p>Environmental impacts to be determined at a later phase. Environmental studies to include the following:</p> <ul style="list-style-type: none"> <li>• Air Quality and GHG</li> <li>• Biological Resources</li> <li>• Cultural Resources</li> <li>• Hazardous Materials/Waste</li> <li>• Noise &amp; Vibration</li> <li>• Stormwater Management/ Water Quality</li> <li>• Community Impact Assessment</li> <li>• Visual Impact Assessment</li> <li>• Traffic</li> </ul>
Stakeholder Coordination (Max score = 5)	<p>4</p> <ul style="list-style-type: none"> <li>• City of Mountain View</li> <li>• Santa Clara Valley Water District</li> <li>• PG&amp;E</li> <li>• Santa Clara County</li> <li>• Surrounding Private Properties (see Parcel Impacts)</li> <li>• NASA Ames</li> </ul>	<p>4</p> <ul style="list-style-type: none"> <li>• City of Mountain View</li> <li>• Santa Clara Valley Water District</li> <li>• PG&amp;E</li> <li>• Santa Clara County</li> <li>• Surrounding Private Properties (see Parcel Impacts)</li> <li>• NASA Ames</li> </ul>	<p>4</p> <ul style="list-style-type: none"> <li>• City of Mountain View</li> <li>• Santa Clara Valley Water District</li> <li>• PG&amp;E</li> <li>• Santa Clara County</li> <li>• Surrounding Private Properties (see Parcel Impacts)</li> <li>• NASA Ames</li> </ul>

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 3 Stevens Creek Transit Bridge at La Avenida			
	Alternative 1	Alternative 2	Alternative 3
	6	7	8
Right of Way and Utility Impacts (Max score = 10)	<p><u>Parcel Impacts</u></p> <ul style="list-style-type: none"> <li>Impacts to APN 116-16-078, 1065 La Avenida St (Microsoft)</li> <li>Significant Acquisition of PG&amp;E Property</li> <li>Significant Acquisition of SCVWD Property</li> <li>Impacts to NASA Ames for bridge approach.</li> </ul> <p><u>Easements</u></p> <ul style="list-style-type: none"> <li>Permanent Easements required</li> <li>Temporary Construction Easements required</li> <li>Ingress/Egress Easements Required</li> </ul> <p><u>Utilities</u></p> <p>Relocation of the following:</p> <ul style="list-style-type: none"> <li>PG&amp;E Gas, Overhead Electrical and Underground Electric</li> <li>PG&amp;E Overhead Transmission Facilities</li> <li>AT&amp;T Communications</li> <li>Verizon/MCI fiber optic facilities</li> <li>Centrulylink fiber optic facilities</li> <li>Google fiber optic facilities</li> <li>City of Mountain View Water Facilities and Sanitary Sewer</li> </ul>	<p><u>Parcel Impacts</u></p> <ul style="list-style-type: none"> <li>Impacts to APN 116-16-078, 1065 La Avenida St (Microsoft)</li> <li>Significant Acquisition of PG&amp;E Property</li> <li>Significant Acquisition of SCVWD Property</li> <li>Impacts to NASA Ames for bridge approach.</li> </ul> <p><u>Easements</u></p> <ul style="list-style-type: none"> <li>Permanent Easements required</li> <li>Temporary Construction Easements required</li> <li>Ingress/Egress Easements Required</li> </ul> <p><u>Utilities</u></p> <p>Relocation of the following:</p> <ul style="list-style-type: none"> <li>PG&amp;E Gas, Overhead Electrical and Underground Electric</li> <li>PG&amp;E Overhead Transmission Facilities</li> <li>AT&amp;T Communications</li> <li>Verizon/MCI fiber optic facilities</li> <li>Centrulylink fiber optic facilities</li> <li>Google fiber optic facilities</li> <li>City of Mountain View Water Facilities and Sanitary Sewer</li> </ul>	<p><u>Parcel Impacts</u></p> <ul style="list-style-type: none"> <li>Impacts to APN 116-16-078, 1065 La Avenida St (Microsoft)</li> <li>Significant Acquisition of PG&amp;E Property</li> <li>Significant Acquisition of SCVWD Property</li> <li>Impacts to NASA Ames for bridge approach.</li> </ul> <p><u>Easements</u></p> <ul style="list-style-type: none"> <li>Permanent Easements required</li> <li>Temporary Construction Easements required</li> <li>Ingress/Egress Easements Required</li> </ul> <p><u>Utilities</u></p> <p>Relocation of the following:</p> <ul style="list-style-type: none"> <li>PG&amp;E Gas, Overhead Electrical and Underground Electric</li> <li>PG&amp;E Overhead Transmission Facilities</li> <li>AT&amp;T Communications</li> <li>Verizon/MCI fiber optic facilities</li> <li>Centrulylink fiber optic facilities</li> <li>Google fiber optic facilities</li> <li>City of Mountain View Water Facilities and Sanitary Sewer</li> </ul>
Cost (Max score = 5)	9	6	8
	<p>Roadway Items = \$6 M Structure Items = \$19 M Right of Way = \$9 M Utility Relocation = \$14 M</p> <p><u>TOTAL \$48 M</u></p>	<p>Roadway Items = \$10 M Structure Items = \$ 41 M Right of Way = \$10 M Utility Relocation = \$15 M</p> <p><u>TOTAL \$76 M</u></p>	<p>Roadway Items = \$10 M Structure Items = \$27 M Right of Way = \$10 M Utility Relocation = \$14 M</p> <p><u>TOTAL \$61 M</u></p>

# ALTERNATIVE SCREENING MATRIX

The matrix below evaluates alternative concepts for the North Bayshore Gateway Improvements

Last Updated 5/26/2021

Location 3 Stevens Creek Transit Bridge at La Avenida			
	Alternative 1	Alternative 2	Alternative 3
Schedule (Max score = 5)	4	4	4
	Environmental/Permitting = 18 Months Design Duration = 18 Months Right of Way = 6 Months Utility Relocation Duration = 14 Months Construction Duration = 27 Months <i>Note: Some tasks overlap</i>  <u>TOTAL DURATION = 69 Months (5.75 Years)</u>	Environmental/Permitting = 18 Months Design Duration = 18 Months Right of Way = 6 Months Utility Relocation Duration = 14 Months Construction Duration = 24 Months <i>Note: Some tasks overlap</i>  <u>TOTAL DURATION = 66 Months (5.5 Years)</u>	Environmental/Permitting = 18 Months Design Duration = 18 Months Right of Way = 6 Months Utility Relocation Duration = 14 Months Construction Duration = 24 Months <i>Note: Some tasks overlap</i>  <u>TOTAL DURATION = 66 Months (5.5 Years )</u>
Total Score	39	36	42

## ATTACHMENT C

Summaries from Stakeholder Meetings

### Meeting with NASA on January 27, 2020

- NASA 01: Project Coordination
  - The project will need to coordinate with planned jurisdictional changes within NASA property
  - The Charleston Avenue Bridge option has a potential to affect the NASA Planetary Ventures (PV) Parcel 5 parking, park, and/or bus area.
  - Coordination with planned improvements along the circulation/perimeter road located at the toe of the levee just east of Stevens Creek.
- NASA 02: Right of way/Permits
  - The City will need to request a grant of easement from NASA for the bridge located on NASA's property.
  - No construction permit is required from NASA, only a courtesy review by NASA.
  - Planetary Ventures (PV) design review board will review the design for the bridge.
  - FAA Permit approval will be required for all of the bridge options/alternatives
- NASA 03: Design Requirements and Considerations
  - The design should take into consideration stormwater runoff controls and patterns established by recent improvements.
  - Improvements along circulation/perimeter road include roadway paving, reclaimed water line and fiber-optic lines.
  - There is a discharge pipe that may potentially cross the area of the Charleston Bridge.
  - Fiber optic and reclaimed water line are also part of the improvements along the circulation/perimeter road.
  - Allen Road is currently used by NASA for fire access and industrial transport (very large vehicles).
  - Special consideration for vibration should be taken during construction for the supercomputing building located on the north side of Allen Road.
  - The driveway access for the Army's daycare can be relocated to align with the centerline of the bridge at the intersection of RT Jones Road. This only applies to the La Avenida Bridge option.
- NASA 04: Notable Analyses
  - The Charleston Avenue Bridge option has a potential to affect the laminar flow into the wind tunnel, which is a National historic building. NASA will need to perform a laminar flow analysis at the cost to the City.
  - The La Avenida Bridge option is outside of the influence envelope of the wind tunnel.
- NASA 05: Environmental Concerns
  - The lower the bridge, the less potential for raptor bird nesting.
  - The transit only bridge would create less of an environmental impact from a traffic perspective than a general-purpose bridge

### Meeting with Google on January 27, 2020

- Google 01: Project Coordination
  - The Charleston Road Bridge option will need to coordinate with the Bay View Development (BVD), which is well into construction with some of the buildings already constructed.
  - There appears to be no conflict between the transit center and the Charleston Avenue bridge alternatives.
  - The east landing of the Charleston Avenue Bridge will need to be coordinated with the parking lot for the sports field.
  - The east landing of the La Avenida Bridge option will require coordination with the federally-owned parcel currently in negotiation with Google for development.
- Google 02: Design Requirements and Considerations
  - Maintain access to the Army's circulation/perimeter road for security access and delivery access.
  - Google asked to consider the bridge crossing over Stevens Creek as a general-purpose bridge. There are no plans to make the bridge a general-purpose bridge. The N. Bayshore Precise Plan shows it as a planned transit/bike/pedestrian bridge.
  - The Charleston Avenue Bridge option is more in line with the complete east-west transit corridor desired by Google.
  - For the La Avenida Bridge Option, Alternative C1, Google recommended moving the pedestrian bridge on the north side.

## Meeting with Santa Clara Valley Water District (SCVWD) on February 2, 2020

- SCVWD 01: Project coordination
  - SCVWD would allow modification (raising or widening) of the levees to tie-in the trails to the bridge as long as the levee is widened or raised outward, such that the hydraulic capacity of the levee is not reduced
  - No structure foundations are allowed in the areas of the levees.
  - A center island in the middle of the creek can be used to support the bridge foundation. Design considerations will need to include debris loading on the column, environmental permitting requirements, hydraulics analysis (by design team), impact on freeboard (may have to raise levee, SCVWD will provide Levee Certification which will include existing freeboard).
    - Only applicable to the Charleston Bridge option
    - La Avenida does not have an island where this applies
- SCVWD 02: Right of Way/Permits:
  - Right of Way Considerations: R/W is often very tight to the outside base of the levee slope, in which options need to be considered if the levee is widened
    - Options include purchasing R/W, an easement, or a retaining wall
- SCVWD 03: Design Requirements and Considerations:
  - Sea level rise and 100-year flood has not been considered previously but might need to be considered for this project
  - Levee design and freeboard requirements shall meet levee design and freeboard requirements
  - SCVWD prefers to minimize the number of crossings over the levee to minimize disruption to maintenance such that 1 bridge is preferred over 2
  - Provide access from other roads to the maintenance trail at either location (Charleston or La Avenida) since currently the only crossing is at Crittenden
  - For both Alternatives 2C and 3C options (At-Grade) where the bridge is on top of the trail and crosses the road at-grade, SCVWD would prefer maintenance paths to go around these locations
    - Option to consider, building an extra ramp from the path at the top of the levee down to the path inside the levee each side of the bridge
  - Provide 14' clearance for the SCVWD access roads that are inside the levee along with the trails along the top of the levees
  - Adjust bent locations of structures to not impact levees where practical
- SCVWD 04: Maintenance
  - Maintenance work window is from June to October
- SCVWD 05: Notable Analyses
  - Hydraulic Analysis- review the impacts of structure foundations constructed in the levee, performed by the project team

## ATTACHMENT D

### Design Criteria

**DESIGN CRITERIA**  
**N. Bayshore Feasibility Study**  
**Charleston Underpass at US 101 Alternatives (Location 1)**

**Survey Control**

- Horizontal datum shall be NAD 83, Epoch 2010
- Vertical datum shall be NAVD 88

**Horizontal and Vertical Alignment**

- Design speed shall be 35 miles per hour
- Posted speed shall be 30 miles per hour
- Alignment shall pass under Hwy 101
- Alignment shall connect to Charleston Rd west of Hwy 101 and Landings Dr east of Hwy 101
- Stopping sight distance per Caltrans HDM
- Vertical clearance min 15-feet for vehicle traveled way
- Vertical clearance min 10-feet for pedestrian sidewalk

**Roadway Cross Section**

- 4-lane roadway with raised center median (2 lanes in each direction)
- Roadway shall be crowned with 2% cross slope
- Raised median shall be 4-ft wide
- Through lanes shall be 12-ft wide
- Inside shoulder shall be 2-ft wide
- Buffered bike lanes (1 lane in each direction)
- Bike lanes shall be 6-ft wide with 3-ft buffer
- Bike lanes shall have 2% cross slope
- Sidewalks shall be 6-ft wide (not including curb/barrier)
- Sidewalks shall have 1.5% max cross slope
- Walls adjacent to traveled way shall have safety shape

**Intersection Design**

- All curb ramps shall be ADA compliant per City of Mountain View standards
- Curb returns shall be min 25-ft radius
- Truck turns per SU40 bus
- Intersection improvements and signal modifications shall be required at Charleston Rd/Landings Dr
- Intersection improvements and signal modifications shall be required at Charleston Rd/Independence Ave

**Drainage and Stormwater Treatment**

- Pump station will be required
- Bioretention areas shall be required on both east and west sides of Hwy 101
- In lieu stormwater treatment may be required

**DESIGN CRITERIA**  
**N. Bayshore Feasibility Study**  
**Stevens Creek Bridge (Locations 2 and 3)**

**Survey Control**

- Horizontal datum shall be NAD 83, Epoch 2010
- Vertical datum shall be NAVD 88

**Horizontal and Vertical Alignment**

- There shall be two separate alignments crossing over Stevens Creek: one for vehicles and one for bikes/pedestrians
- Both alignments shall connect to Charleston Rd west of Stevens Creek
- Design speed for vehicle crossing shall be 35 miles per hour
- Posted speed for vehicle crossing shall be 30 miles per hour
- Design speed for bike crossing shall be 20 miles per hour
- Stopping sight distance shall be per AASHTO
- All bridge appurtenances, including fencing and lights, shall maintain 10' radial clearance from overhead wires

**Vehicle Bridge Cross Section**

- 2-lane roadway with no median (1 lane in each direction)
- Roadway shall be crowned with 2% cross slope
- Through lanes shall be 12-ft wide
- Outside shoulder shall be 4-ft wide
- Sidewalks shall be 5-ft wide
- Sidewalks shall have 1.5% max cross slope
- Barriers shall be provided outside sidewalk

**Bike/Ped Bridge Cross Section**

- 2-way bike lanes (1 lane in each direction)
- Roadway shall be 2% cross slope with no crown
- Bike lanes shall be 6-feet wide
- Sidewalk shall be 8-feet wide
- Sidewalk shall be 1.5% max cross slope
- Barriers shall be provided on each side

**Intersection Design**

- All curb ramps shall be ADA compliant per City of Mountain View standards
- Curb returns shall be min 25-ft radius
- Truck turns per SU40 bus
- Intersection improvements and signal modifications shall be required at Charleston Rd/Shorebird Way

**Stormwater Treatment**

- Bioretention areas shall be required on both east and west sides of Stevens Creek